

Amendments to the Claims

Please cancel Claims 5-25. Please add new Claims 26-46. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Original) A system for actuating a spray pump assembly, the system comprising:
 - a motor component for receiving a power input and a control input and producing a rotary drive output therefrom;
 - a drive transmission component for receiving the rotary drive output and producing a linear drive output therefrom;
 - a spray pump holder component for removably securing the spray pump assembly;
 - a force coupler for coupling the linear drive output to the spray pump mechanism, so as to apply a force to the spray pump mechanism;
 - a force transducer for producing a force signal proportional to the force applied to the spray pump mechanism; and
 - a system controller for receiving a set of test inputs including (i) the force signal, (ii) one or more feedback signals from the motor component, and (iii) user input corresponding to spray pump test parameters, and providing the control input to the motor component as a predetermined function of the set of test inputs;wherein the system is operative to actuate the spray pump mechanism according to an actuation profile defined by the set of test inputs.
2. (Original) A method of actuating a spray pump assembly including a reservoir component and a pump/nozzle component, via an actuator system including a rotary motor driving a linear screw rail assembly, thereby applying a force to the spray pump assembly, the method comprising:
 - removably securing the spray pump assembly to a spray pump holder component;

determining (i) a quiescent position of the spray pump, and (ii) a fully actuated position of the spray pump assembly;

generating an actuation profile as a predetermined function of the quiescent position, the fully actuated position, and user input corresponding to spray pump test parameters; and

actuating the spray pump according to the actuation profile.

3. (Original) A method according to claim 2, wherein determining the quiescent position of the spray pump further includes (i) measuring an amount of force applied to the spray pump assembly, (ii) advancing the linear screw rail assembly until the amount of force applied to the spray pump assembly exceeds a first predetermined value, and (iii) recording a position of the linear screw rail assembly when the amount of force applied to the spray pump assembly exceeds the first predetermined value.
4. (Original) A method according to claim 3, wherein determining the fully actuated position of the spray pump assembly further includes (i) continuing to advance the linear screw rail assembly until the amount of force applied to the spray pump assembly exceeds a second predetermined value, and (ii) recording a position of the linear screw rail assembly when the amount of force applied to the spray pump assembly exceeds the second predetermined value.

5-25. Cancelled

26. (New) The system of claim 1 wherein the spray pump holder comprises:
 - (i) a clamp having an aperture disposed about a central axis, and a plurality of fingers disposed about the perimeter of the aperture and extending out from the clamp parallel to the central axis;

(ii) a compression member removably attached to the clamp;
wherein the pump/nozzle component is inserted into the aperture along the central axis,
and the compression member, when attached to the clamp, compresses the plurality of
fingers against the pump/nozzle component so as to secure the pump/nozzle component
to the clamp.

27. (New) The system of claim 26 wherein the clamp consists of a low friction material.
28. (New) The system of claim 27 wherein the low friction material is Teflon.
29. (New) The system of claim 26 wherein the compression member is constructed and arranged so as to variably compress the plurality of fingers against the pump/nozzle component.
30. (New) The system of claim 26 wherein the clamp and the compression member include mating threads, such that the compression member screws into the clamp and drives the fingers toward the central axis.
31. (New) The system of claim 26 wherein the compression member consists of anodized aluminum.
32. (New) The system of claim 26 further including an annular insert disposed about the central axis, between the fingers and the central axis, wherein the pump/nozzle component is inserted through the annular insert and the fingers compress the annular insert against the pump/nozzle component.

33. (New) The system of claim 26 wherein each of the fingers is characterized by a triangular cross section in a plane perpendicular to the central axis.
34. (New) The system of claim 26 wherein the clamp is characterized by a substantially square body disposed within a plane perpendicular to the central axis.
35. (New) The system of claim 34 wherein opposite sides of the square body slide into corresponding grooves in a reference platform.
36. (New) The system of claim 1 wherein the spray pump holder comprises:
 - (i) a bracket for supporting the spray pump assembly, and
 - (ii) at least one securing strap for removably securing the spray pump assembly against the bracket.
37. (New) The system of claim 36 wherein the bracket includes a first cradle member having a first engaging surface for retaining a first surface of the reservoir component, and a second cradle member having a second engaging surface for retaining a second surface of the reservoir component.
38. (New) The system of claim 37 wherein the first engaging surface is substantially orthogonal to the second engaging surface.
39. (New) The system of claim 37 wherein the first engaging surface includes a V-shaped surface, so that the first engaging surface contacts a reservoir component having an arcuate exterior surface at two locations.

40. (New) The system of claim 37 wherein the second engaging surface includes a V-shaped surface, so that the second engaging surface contacts a reservoir component having an arcuate exterior surface at two locations.
41. (New) The system of claim 37 wherein the bracket further includes an aperture, disposed between the first cradle member and the second cradle member, for accommodating a heel portion of the spray pump assembly.
42. (New) The system of claim 36 further including a first securing strap and a second securing strap, wherein the first securing strap secures the spray pump assembly against the first cradle member, and the second securing strap secures the heel portion of the spray pump assembly into the aperture and against the second cradle member.
43. (New) The system of claim 36 wherein a first end of the at least one securing strap is fixedly attached to a first anchor on the bracket, and a second end of the at least one securing strap is removably attached to a second anchor on the bracket.
44. (New) The system of claim 43 wherein the second end of the at least one securing strap loops around the second anchor removably attaches to a distal portion of the securing strap.
45. (New) The system of claim 1 wherein the spray pump holder comprises:
 - (i) a base including a body member, and a housing member having a stop tab; and
 - (ii) a clamping assembly including a first lever and a second lever pivotally attached at a pivot point about a pivot axle, and a spring attached to the first lever and the second lever so as to force together a first end of the first lever and a first end of the second lever;

wherein the stop tab provides a platform against which a pump/nozzle component of a spray pump assembly presses, and the pump/nozzle component is secured between the first end of the first lever and a first end of the second lever.

46. (New) The system of claim 45 wherein the body member is characterized by a square body, and opposite sides of the square body slide into corresponding grooves in a reference platform.